

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re: Application of: Islam et al. : Attorney Docket No.: 944-001.128

Serial No.: 10/798,824 : Examiner: Hung Q. Dang

Filed: March 10, 2004 : Art Unit: 2621

For: METHOD AND DEVICE FOR COMPRESSED-DOMAIN VIDEO EDITING

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF OF APPELLANTS (37 CFR §41.41)

Sir:

This is a reply appeal in regard to the final rejection contained in a Final Office Action mailed on October 30, 2009, (the "Final Office Action"), the Advisory Action (mailed February 2, 2010), and in furtherance of an Apply Brief (mailed March 2, 2010) and a Corrective Brief (mailed 30, 2010), and in reply to an Examiner's Answer (mailed July 8, 2010, hereafter referred to as Answer). This reply brief is being filed within two months of this Examiner's Answer.

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I. REAL PARTY IN INTEREST (37 CFR §41.37(c)(1)(i))

The real party in interest in this action is Nokia Corporation, Keilalahdentie 4, FIN-02150 Espoo, Finland, by virtue of the Assignment dated March, 31, 2004. The Assignment was recorded in the U.S. Patent and Trademark Office on July 15, 2004.

II. RELATED APPEALS AND INTERFERENCES (37 CFR §41.37(c)(1)(ii))

There are no related appeals or interferences.

III. STATUS OF CLAIMS (37 CFR §41.37(c)(1)(iii))

The status of the claims is:

Claims pending: 3-6, 10, 11, 15-17, 19-35, 40, 41, 43, 44, 49, 50 and 53-58.

Claims canceled: 1, 2, 7-9, 12-14, 18, 36-39, 42, 45-48 and 51-52.

Claims objected to: none.

Claims rejected: 3-6, 10, 11, 15-17, 19-35, 40, 41, 43, 44, 49, 50 and 53-58.

Claims on appeal: 3-6, 10, 11, 15-17, 19-35, 40, 41, 43, 44, 49, 50 and 53-58.

IV. STATUS OF AMENDMENTS (37 CFR §41.37(c)(1)(iv))

No amendment of claims 3-6, 10, 11, 15-17, 19-35, 40, 41, 43, 44, 49, 50 and 53-58 has been filed subsequent to final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER (37 CFR §41.37(c)(1)(v))

Appellant's invention is directed to a compressed domain processing apparatus for editing an input video frame to achieve a video effect. The apparatus further includes an audio processing module for modifying the audio data. The apparatus has a frame analyzer module adapted for determining at least one video frame for video editing based on the frame characteristics, and a compressed domain processor for carrying the video editing. The apparatus further includes a decoding module for decoding one or more video frames. (see Figure 5).

The invention of independent claim 1 is directed to a method for video editing in an editing apparatus wherein at least one of the input video frames are determined to be edited to achieve a video effect, depending upon the frame characteristics of the video frame (see p.10, lines 19-25). The method includes the step of modifying the bitstream in the compressed domain based on specified editing parameters for providing a modified bitstream indicative of edited video frames if the frame characteristic of said at least one video frame is the first characteristic (p.11, lines 2-5). But if the frame characteristic of said at least one video frame is the second characteristic, decode said at least one video frame for providing only one decoded video frame and changing said only one decoded video frame to achieve the video effect (p.11, lines 19-33; Figure 8, only one P frame to be converted to I).

In the invention of dependent claim 4, the variable length code coded video data is converted into a binary form prior to modifying (see p.11, lines 11-13).

In the invention of dependent claim 5, the variable length code coded video data is processed in an inverse cosine transform operation prior to converting (see p.11, lines 16-17).

In the invention of dependent claim 6, one or more of the input video frames is modified in a different domain such as a file format domain (see p.13, lines 4-5).

In the invention of dependent claim 10, the modified bitstream comprises edited frame data which is converted into an edited media file (see Figure 4, media file 180; p.9, lines 19-21).

In the invention of dependent claim 10, the edited frame data is converted based on format information indicative of editing properties of the edited frame data (see p.15, lines 14-19).

In the invention of dependent claim 15, the modifying and changing is also based on the editing parameters according to a user's chosen editing reference (p.9, lines 9-12).

The invention of independent claim 16 is directed to an editing apparatus that includes

a frame analyzer module for determining at least one video frame for video editing to achieve a video effect and the frame characteristics of the video frame (see Figure 5; p. 10, lines 19-25);

a compressed domain processing module for modifying the video frame data based on specified editing parameters for providing a modified bitstream indicative of edited video frames if the frame characteristic of said at least one video frame is the first characteristic (Figure 5; p.11, lines 2-5); and

a decoding module for decoding said at least one video frame for providing only one decoded video if the frame characteristic of said at least one video frame is a second characteristic, so as to change said only one decoded video frame for achieving the video effect (see Figure 5, p.11, lines 19-33; Figure 8, only one P frame to be converted to I).

In the invention of dependent claim 17, the apparatus also includes a spatial domain processing module adapted for changing video frame data in the decoded video frame (see Figure 5, block 50; p.12, lines 1-9).

In the invention of dependent claim 19, the apparatus also includes a format composer module for converting the modified video data into an edited media file (Figure 4, block 80; p.15, lines 15-20).

In the invention of dependent claim 20, the format composer module comprises a file format composer (p.15, lines 15-20).

In the invention of dependent claim 21, the format composer module comprises a media format composer (p.15, lines 15-20)

In the invention of dependent claim 22, the frame analyzer module is adapted for identifying format information indicative of editing properties of the modified video data so

as to convert the modified video data into the edited media file compatible to a media player (see p.15, lines 14-19).

In the invention of dependent claim 23, the apparatus also includes a format parser module for separating the audio from the video frame data in the input video frames, and an audio processing module adapted for modifying the audio data for providing modified audio data (see Figure 4, blocks 20, 60; p.9, line 33 to p.10, line 4).

In the invention of dependent claim 24, the apparatus also includes a combination module for combining the modified video data and the modified audio data for providing combined signals indicative of combined data (see Figure 4, block 80; p.15, lines 14-16).

In the invention of dependent claim 25, the apparatus also includes a format composer, responsive to the combined signals, for converting the combined data into an edited media file for use in a media player (see Figure 4, block 80; p.15, 15-20).

The invention of independent claim 26 is directed to an editing system that includes:
a media encoder for encoding media data (see Figure 10, Video encoder 310);
a media editing device for providing edited data having at least one editing effect specified by one or more editing parameters (see Figure 10, Video editing system 2; p.16, lines 15-16), wherein the media editing device includes:

 a video editor module for determining at least one video frame for video editing to achieve a video effect and the frame characteristics of the video frame (see Figure 5; p. 10, lines 19-25); and

 a compressed domain processing module for modifying the video frame data based on specified editing parameters for providing a modified bitstream indicative of edited video frames if the frame characteristic of said at least one video frame is the first characteristic (Figure 5; p.11, lines 2-5); and

 a further module for decoding said at least one video frame for providing only one decoded video if the frame characteristic of said at least one video frame is a second

characteristic, so as to change said only one decoded video frame for achieving the video effect (see Figure 5, p.11, lines 19-33; Figure 8, only one P frame to be converted to I).

In the invention of dependent claim 27, the media encoder has a connectivity mechanism and the media editing device has a further connectivity mechanism for allowing the media editing device to communicate with the media encoder in order to receive therefore encoded media data in a wireless fashion (see Figure 16, block 356; p.16, lines 25-29).

In the invention of dependent claim 28, the media decoder has a connectivity mechanism and the media editing device has a further connectivity mechanism for allowing the media editing device to provide the edited data to the media decoder in a wireless fashion (see Figure 16, block 356; p.16, lines 25-29).

In the invention of dependent claim 29, the media encoder and the media editing device are integrated in an expanded encoding module (see Figure 10, block 350)

In the invention of dependent claim 30, the media decoder has a connectivity mechanism and the expanded encoding module has a further connectivity mechanism for allowing the expanded encoding module to provide the edited data to the media decoder in a wireless fashion (see Figure 16, block 356; p.16, lines 25-29).

In the invention of dependent claim 31, the media decoder and the media editing device are integrated in an expanded decoding module (see Figure 10, block 36; p.16, lines 19-21).

In the invention of dependent claim 32, the media encoder has a connectivity mechanism and the expanded decoding module has a further connectivity mechanism for allowing the media encoder to provide the edited data to the expanded decoding module in a wireless fashion (see Figure 16, block 356; p.16, lines 25-29).

In the invention of dependent claim 33, each of the connectivity mechanism and the further connectivity mechanism comprises a bluetooth connectivity module (see p.16, lines 25-28).

In the invention of dependent claim 34, each of the connectivity mechanism and the further connectivity mechanism comprises an infra-red connectivity module (see p.16, lines 25-28).

The invention of independent claim 35 is directed to an apparatus for editing media files that includes

a video editing application module for specifying an editing effect on the input video frames (see Figure 3, Video editing application module 12; p.9, lines 7-12); and

a video editing device comprising:

an editor module adapted for identifying the frame characteristic of said at least one video frame (see Figure 5; p. 10, lines 19-25);

a compressed domain processing module for modifying the video frame data based on specified editing parameters for providing a modified bitstream indicative of edited video frames if the frame characteristic of said at least one video frame is the first characteristic (Figure 5; p.11, lines 2-5); and

a further module for decoding said at least one video frame for providing only one decoded video if the frame characteristic of said at least one video frame is a second characteristic, so as to change said only one decoded video frame for achieving the video effect (see Figure 5, p.11, lines 19-33; Figure 8, only one P frame to be converted to I).

In the invention of dependent claim 40, the apparatus includes a display screen for displaying video images based on modified video data (see Figure 9, block 5; p.15, lines 27-28).

In the invention of dependent claim 41, the apparatus includes a mobile terminal (see p.15, lines 22-27).

The invention of independent claim 43 is directed to a computer readable storage medium embedded therein a software program (see Figure 9, p.16, lines 8-12). The software program includes programming codes for:

determining at least one video frame for video editing to achieve a video effect, and for identifying the frame characteristic of said at least one input video frame (see p.10, lines 19-25); modifying the bitstream in the compressed domain based on specified editing parameters for providing a modified bitstream indicative of edited video frames if the frame characteristic of said at least one video frame is the first characteristic (p.11, lines 2-5), and decoding said at least one video frame for providing only one decoded video frame, if the frame characteristic of said at least one video frame is the second characteristic, decoding said at least one video frame so as to change said only one decoded video frame for achieving the editing effect (p.11, lines 19-33; Figure 8, only one P frame to be converted to I).

In the invention of dependent claim 44, the software program also has a code for modifying video data in one or more further input video frames in a further domain different from the compressed domain based on the frame characteristics of said further input video frame and the specified editing parameters so as to provide modified further video data (see p.13, lines 4-5)

The independent claim 49 is directed to an editing apparatus including:

means for determining at least one video frame for video editing to achieve a video effect and identifying the frame characteristics of the video frame (see Figure 5, frame analyzer module; p. 10, lines 19-25);

means for modifying the video frame data based on specified editing parameters for providing a modified bitstream indicative of edited video frames if the frame characteristic of said at least one video frame is the first characteristic (Figure 5 a compressed domain processing module; p.11, lines 2-5); and

means for decoding said at least one video frame for providing only one decoded video if the frame characteristic of said at least one video frame is a second characteristic, so

as to change said only one decoded video frame for achieving the video effect (see Figure 5, decoding module; p.11, lines 19-33; Figure 8, only one P frame to be converted to I).

In the invention of dependent claim 50, the apparatus also includes means for converting the edited video frames into an edited media file (see Figure 5, block 50; page 12, lines 1-9).

In the invention of dependent claim 53, the video effect comprises a scene-transition effect, and the method further includes the steps of decoding at least one of said preceding video frames if the frame characteristic of said at least one video frame is the second characteristic, and transforming the decoded video frame into an intra frame after said changing (see Figure 8; p.11, lines 24-31).

In the invention of dependent claim 54, the video effect comprises a color-change effect (see p.11, lines 5-7)

In the invention of dependent claims 55, 56 and 57, the spatial domain processing module comprises a special effect processor and a transition effect processor, and the video effect comprises a color-change effect and a scene-transition effect, wherein

if the video effect is a scene-transition effect, said transition effect processor is adapted for changing the decoded video frame and the decoding module is further adapted for decoding said at least one of said preceding video frames so as to transform the decoded video frame into an intra frame after said changing for achieving the scene-transition effect; and

if the video effect is a color-change effect, said special effect processor is adapted for changing the decoded video frame for achieving the color-change effect (see Figure 6, blocks 52, 54; p.12, lines 10-13).

In the invention of dependent claim 58, the video effect comprises a color-change effect and a scene-transition effect, and the programming codes include a code for changing the decoded video frame, decoding said at least one of said preceding video frames,

transforming the decoding video frame into an intra frame after said changing for achieving the scene-transition effect, if the editing effect is the scene-transition effect, and

a coding for changing the decoded video frame for achieving the color-change effect if the editing effect is the color-change effect (see p.12, lines 10-13.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL (37 CFR §41.37(c)(1)(vi))

Claims 3, 16-17, 19-22, 26-32 and 53-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Wee et al.* (U.S. Patent No. 6,104,441, hereafter referred to as *Wee*), in view of *Hamada et al.* (U.S. Patent Application Publication No. 2002/0135608, hereafter referred to as *Hamada*).

Claims 4-6, 10-11, 15, 35, 40, 41, 43, 44, 49, 50, 57 and 58 are rejected under 35 U.S.C.103(a) as being unpatentable over *Wee*, in view of *Hamada*, further in view of *Naimpally et al.* (U.S. Patent No. 5,477,397, hereafter referred to as *Naimpally*).

Claims 23-25 are rejected under 35 U.S.C.103(a) as being unpatentable over *Wee*, in view of *Hamada*, further in view of *Abe* (U.S. Patent No. 6,618,491).

Claims 33 and 34 are rejected under 35 U.S.C.103(a) as being unpatentable over *Wee*, in view of *Hamada*, further in view of *Ikonen* (U.S. Patent Application Publication No. 2003/005329).

VII. ARGUMENT (37 CFR §41.37(c)(1)(vii))

A. The Claimed Invention

In each of the independent claims 3, 16, 26, 35, 43 and 49, one or more frames in the bitstream to be edited are modified dependent upon the frame characteristics. If the frame characteristic is the first characteristic, the bitstream is modified in the compressed domain. If the frame characteristic is the second characteristic, at least one video frame is decoded and only one decoded frame is provided and changed to achieve the video effect. As shown in Figure 8, although two or more frames are decoded, only one decoded frame “P” is used in edited video segments, all the other decoded frames are thrown away.

B. The Cited *Wee* Reference

As shown in Figure 4, *Wee* discloses that when a cut sequence is used to form the tail data stream (block 205). If the first frame in a cut sequence to be appended to another image sequence is a P frame (such as the sequence P₆B₇B₈ P₉I₀... that is cut from an original sequence ...B₁B₂I₃P₄B₅P₆B₇B₈ P₉I₀...), then it is required to decompress as little as four entire frames and perform three re-conversions to achieve a video effect. In this particular application, the video effect is image splicing (col.8, line 12 to col.9, line 30).

The Examiner admits that *Wee* fails to disclose providing only one decoded video frame and changing said only one decoded video frame to achieve the video effect. The Examiner points to *Hamada* for disclosing this feature (paragraphs [0115]-[0117], [0142]-[0144] – wherein reducing the size of the picture to make the thumbnail corresponding to the recited changing operation).

C. The Cited *Hamada* Reference

As pointed out on page 3 of the Request for Reconsideration filed January 4, 2010, *Hamada* discloses a digital video recorder (DVR) for recording and/or reproducing digital broadcast signals, without decoding or re-encoding, as in a data streamer (paragraph [0006]). *Hamada* uses two types of thumbnails to mark a clip (an AV stream) and a playlist (a group of playback domains of the AV stream) (paragraph [0082]). One type of the thumbnails is referred to as menu thumbnails and the other is referred to as mark thumbnails. After a

picture to be the thumbnail picture has been selected or decided, the creation of the menu thumbnail and the mark thumbnail is identical (steps S6-S10 in Figure 30; steps S27-S31 in Figure 31, paragraph [0149]). The controller 23 then captures a picture from the AV encoder 15 and transfers the picture data to a RAM. The captured picture is compressed if it has not been compressed (paragraphs [0144]). Subsequently, the controller 23 creates header information indicative of thumbnail id, size and the number of pixels in the X and Y directions for dividing the compressed picture into units.

Thus, *Hamada* does not disclose that the picture selected to be the thumbnail picture is decoded as suggested by the Examiner.

Furthermore, the menu thumbnail and the mark thumbnail are only recorded as independent groups on the recording medium. They are used for marking the recorded picture data on the recording medium so as to allow the user to select the recorded data (Abstract, paragraph [0008]). The thumbnails are not used to achieve a video effect of the recorded picture data.

Therefore, *Hamada* fails to disclose providing only one decoded video frame and changing said only one decoded video frame to achieve the video effect.

D. Combined Teachings of *Wee* and *Hamada*

In rejecting the independent claims, the Examiner admits that *Wee* fails to disclose providing only one decoded video frame and changing said only one decoded video frame to achieve the video effect. The Examiner points to *Hamada* for disclosing this feature. The Examiner further states that, one of ordinary skill in the art would have been motivated to incorporate the teaching of *Hamada* into the method as disclosed by *Wee* in order to allow users to specify a highlight or a characteristic scene (*Hamada*, paragraph [0116]).

E. The Examiner's Answer

The 103 rejection of all pending claims in the Answer is the same as that in the final action.

In section 10(C) of the Answer, the Examiner responds to appellant's arguments described in Subsection C in the brief. In section 10(D) of the Answer, the Examiner

responds to appellant's arguments described in Subsection D in the brief. The Examiner disagrees with appellant's arguments as follows:

1. On page 12 of the brief, appellant argues that “*Hamada* does not disclose that the picture selected to be the thumbnail picture is decoded”. *See Answer*, page 18.

2. On page 12 of the brief, appellant argues that the thumbnails as disclosed by *Hamada* are used for marking the recorded picture data on the recording medium so as to allow the user to select the recorded data and not used to achieve a video effect on the recorded picture data. *See Answer*, page 19, third paragraph.

3. On page 12, of the brief, appellant argues that “[a]s pointed out in Sub-section C above, *Hamada* fails to disclose providing only one decoded video frame and changing said only one decoded video frame to achieve the video effect.” *See Answer*, page 19, last paragraph.

4. On page 12-13 of the brief, appellant argues that “*Wee* does not disclose that if the frame characteristic is the second characteristic, said at least one video frame is decoded for providing only one decoded video frame so that this one decoded frame is changed to achieve the video effect.” In response, the Examiner submits that this argument is moot since *Wee* is not relied upon to disclose the feature. *See Answer*, page 20, second paragraph.

F. Appellant's Reply to the Examiner's Answer

At issue here is whether the combined teachings of *Wee* and *Hamada* disclose the limitation that “if the frame characteristic of said at least one video frame is the **second** characteristic, decoding said at least one video frame for providing only one decoded video frame and changing said only one decoded video frame to achieve the video effect” in independent claims 3, 16, 26, 35, 43 and 49. The limitation does not indicate that only one frame is decoded, but that only one decoded frame is provided and changed to achieve the video effect.

F.1 First Characteristic and Second Characteristic

In the final office action (page 3, line 5 and lines 8-9) and in the Answer (page 4, line 15 and lines 18-19), the Examiner considers an I-frame as having a first frame characteristic (column 12, line 36 to column 13, line 20 in *Wee*), and a P frame as having a second frame

characteristic (*column 11, lines 9-32 in Wee*). According to *Wee*, if the frame characteristic is the second frame characteristic, more than one decoded frame is changed. See Sub-section A above.

The Examiner admits that *Wee* does not disclose providing only one decoded video frame and changing said only one decoded video frame to achieve the video effect, if said at least frame has the **second** characteristic. The Examiner fails to show why this limitation is obvious. See Subsections F.2 and F.3 below. The Examiner also fails to particularly point out in which paragraphs does *Hamada* disclose changing one decoded frame to achieve the video effect. See Subsection F.4 below.

F.2 Picture to be Thumbnail Has First Characteristic

In the final office action, the Examiner points to *Hamada* for disclosing the limitation that “if the frame characteristic of said at least one video frame is the **second** characteristic, decoding said at least one video frame for providing only one decoded video frame and changing said only one decoded video frame to achieve the video effect”, because *Hamada* discloses reducing the size of a picture to make the thumbnail.

In the Answer, in order to show that *Hamada* does disclose that the picture selected to be thumbnail is decoded, the Examiner states: “*Hamada discloses that the thumbnail format must be an I-picture, which is an intra-coded picture (paragraph [0134]). This is because the thumbnail picture must be independently decoded for display since it does not have any other reference frames associated with it and stored with in. As such, it is impossible that an encoded picture is converted to intra-encoded picture without being in the decoded state first*” (page 18, last paragraph to page 19, first paragraph).

If the thumbnail picture **must be** independently decoded without any other reference frames, the thumbnail picture is an **I-picture**. Accordingly, the frame characteristic of the thumbnail picture to be decoded is the first characteristic. Thus, the Examiner only cites *Hamada* for disclosing decoding a frame having the first characteristic. The Examiner does not indicate what *Hamada* does with the decoded frames if the frame characteristic is the second characteristic.

F.3 I-Frame Does Not Have Second Characteristic

In the Advisory Action (page 3, third paragraph), the Examiner states even if *Wee* does not disclose providing and changing only one decoded frame if said at least one frame has the second characteristic, it would be obvious that “*in case a video effect to be made on one picture that happens to be an I frame, ..., only the I frame needs to be decoded*”. Again, the Examiner only talks about the frame characteristic being the first characteristic.

F.4 Usage of Thumbnails in *Hamada*

In response to appellant’s argument that *Hamada* does not disclose using a thumbnail to achieve a video effect of the recorded picture data, the Examiner states that:

First of all, playback of the picture stream without marking and resuming is different from playback of the picture stream with marking and resuming features in terms of visual effects. In other words, the thumbnail data are modified into a mark form when, coming to display, giving viewers a visually different presentation, e.g. in form of a graphic user interface, where viewers can make selections to interrupt the original playback sequence for a different playback sequence. See Answer, page 19, fourth paragraph.

It is respectfully submitted that the Examiner fails to point out in which paragraphs does *Hamada* disclose or suggest that *thumbnail data are modified for display in order to give viewers a visually different presentation so that viewers can make selections to interrupt the original playback sequence for a different playback sequence*. The Examiner fails to point out where *Hamada* discloses that a user views a thumbnail in order to select a playback sequence.

As pointed in Sub-section C above, *Hamada* only discloses using two types of thumbnails to mark a clip and a playlist. They are menu thumbnails and mark thumbnails. *Hamada* discloses using thumbnails as marks in order to specify a program start point, a scene change point, or start and end points of the commercial (paragraph [0079]). A user’s involvement with the thumbnails is only in the thumbnail creating process. In creating a mark thumbnail, the user views an AV stream being reproduced to search for a scene desired to be marked and selects or specifies which picture to be made into a thumbnail (S3-S5, Figure 30, paragraphs [0142]-[0144]). In creating a menu thumbnail, the user is allowed to select the thumbnail to be created from 1) a picture in a specified playlist or 2) a picture captured from outside. If the picture is selected from the playlist, the user searches a selected playlist for

scene desired to be thumbnail. In either case, the user decides which picture to be thumbnail (S25-S26, Figure 31, paragraphs [0146]-[0149]). *Hamada* does not disclose or suggest that a user views a thumbnail in order to select a playback sequence as suggested by the Examiner.

Thus, the Examiner fails to point out where *Hamada* discloses using a thumbnail to achieve a video effect of the recorded picture data. In any rate, as pointed out by the Examiner, a picture to be thumbnail must be an **I-picture** which has a first characteristic.

F.5 Combined Teachings of *Wee* and *Hamada* Fail to Render Claims 3, 16 and 26 Obvious

Since neither *Wee* nor *Hamada* discloses providing and changing only one decoded frame if the frame characteristic is the **second** characteristic, the combined teachings of *Wee* and *Hamada* do not disclose or suggest the claim limitation that “if the frame characteristic of said at least one video frame is the **second** characteristic, decoding said at least one video frame for providing **only one** decoded video frame and changing said only one decoded video frame to achieve the video effect”.

For the above reason, *Wee*, in view of *Hamada*, fails to render independent claims 3, 16, and 26 obvious.

F.5 Combined Teachings of Cited References Fail to Render Claims 3, 16 and 26 Obvious

In rejecting independent claims 35, 43 and 49, the Examiner also cites *Naimpally* for disclosing that the bitstream comprises an audio bitstream. Thus, the combined teachings of the *Wee*, *Hamada* and *Naimpally* do not disclose the limitation that “if the frame characteristic of said at least one video frame is the **second** characteristic, decoding said at least one video frame for providing only one decoded video frame and changing said only one decoded video frame to achieve the video effect”.

For the above reasons, *Wee*, in view of *Hamada*, and further in view of *Naimpally*, fails to render independent claims 35, 43 and 49 obvious.

F.6 Dependent Claims

As for dependent claims 4-6, 10, 11, 15, 17, 19-25, 27-34, 40, 41, 44, 49 and 53-58, they are dependent from claims 3, 16, 26, 35, 43 and 49 and include further limitations. For

reasons regarding claims 3, 16, 26, 35, 43 and 49 above, claims 4-6, 10, 11, 15, 17, 19-25, 27-34, 40, 41, 44, 49 and 53-58 are also allowable. *See* Sub-section VII.G in the brief.

VIII CLAIMS APPENDIX (37 CFR §41.37(c)(1)(viii))

Claims 1-2 (canceled).

3. A method, comprising:

determining in an editing apparatus, among a plurality of input video frames in a bitstream, at least one video frame for video editing to achieve a video effect, wherein the input video frames comprise frame characteristics, the frame characteristics comprising at least a first characteristic and a second characteristic, and wherein the input video frames comprise one or more preceding video frames preceding said one video frame;

identifying the frame characteristic of said at least one input video frame;

modifying the bitstream in the compressed domain based on specified editing parameters for providing a modified bitstream indicative of edited video frames if the frame characteristic of said at least one video frame is the first characteristic, and wherein if the frame characteristic of said at least one video frame is the second characteristic, decoding said at least one video frame for providing only one decoded video frame and changing said only one decoded video frame to achieve the video effect.

4. The method of claim 3, wherein the input video frames comprise video data coded with a variable length code, said method further comprising:

converting the variable length code coded video data into a binary form prior to said modifying.

5. The method of claim 4, further comprising:

processing the variable length code coded video data in an inverse cosine transform operation prior to said converting.

6. The method of claim 3, further comprising:

modifying one or more further input video frames in the bitstream in a further domain different from the compressed domain for providing a further modified video bitstream, wherein said further domain comprises a file format domain.

Claims 7 - 9. (canceled)

10. The method of claim 3, wherein the modified bitstream comprises edited frame data, said method further comprising:

converting the edited frame data into an edited media file.

11. The method of claim 10, wherein the edited frame data is converted based on format information indicative of editing properties of the edited frame data.

Claims 12 - 14. (canceled)

15. The method of claim 3, wherein said modifying and changing is also based on the editing parameters according to a user's chosen editing reference.

16. An apparatus, comprising:

a frame analyzer module, responsive to signals indicative of a plurality of input video frames in a bitstream, adapted for determining at least one video frame for video editing to achieve a video effect, wherein the input video frames comprise frame characteristics, the frame characteristics comprise a first characteristic and a second characteristic, and wherein the input video frames comprise one or more preceding video frames preceding said at least one input video frame, said frame analyzer module further adapted for identifying the frame characteristic of said at least one video frame; and

a compressed domain processing module, responsive to signals indicative of the frame characteristic of said at least one video frame, for modifying the video frame data based on specified editing parameters for providing a modified bitstream indicative of edited video frames if the frame characteristic of said at least one video frame is the first characteristic; and

a decoding module, adapted for decoding said at least one video frame for providing only one decoded video if the frame characteristic of said at least one video frame is a second

characteristic, so as to change said only one decoded video frame for achieving the video effect.

17. The apparatus of claim 16, further comprising:

a spatial domain processing module adapted for changing video frame data in the decoded video frame.

18. (canceled)

19. The apparatus of claim 16, further comprising:

a format composer module for converting the modified video data into an edited media file.

20. The apparatus of claim 19, wherein the format composer module comprises a file format composer.

21. The apparatus of claim 19, wherein the format composer module comprises a media format composer.

22. The apparatus of claim 19, wherein the frame analyzer module is further adapted for identifying format information indicative of editing properties of the modified video data so as to convert the modified video data into the edited media file compatible to a media player.

23. The apparatus of claim 16, wherein the bitstream also comprises audio data, said apparatus further comprising:

a format parser module, for separating the audio from the video frame data in the input video frames, and

an audio processing module adapted for modifying the audio data for providing modified audio data, if so desired.

24. The apparatus of claim 23, further comprising:

a combination module for combining the modified video data and the modified audio data for providing combined signals indicative of combined data.

25. The apparatus of claim 24, further comprising:

a format composer, responsive to the combined signals, for converting the combined data into an edited media file for use in a media player.

26. An apparatus, comprising:

a media encoder for encoding media data for providing encoded media data in a plurality of encoded video frames, wherein the encoded video frames comprise frame characteristics, the frame characteristics comprising at least a first characteristic and a second characteristic;

a media editing device, responsive to the encoded video frames, for providing edited data including one or more edited frames, the edited frames having a least one editing effect specified by one or more editing parameters, and

a media decoder, responsive to the edited data, for providing decoded media data, wherein the media editing device comprises:

a video editor module, responsive to signals indicative of encoded video frames, adapted for determining at least one video frame for video editing, and wherein the encoded video frames comprise one or more preceding video frames preceding said at least one video frame, said video editor module further adapted for identifying the frame characteristic of said at least one video frame;

a compressed domain processing module, responsive to signals indicative of the frame characteristic of said at least one video frame, for modifying the encoded frame data based on specified editing parameters for providing the edited data if the frame characteristic of said at least one video frame is the first characteristic; and

a further module, adapted for decoding said at least one video frame for providing only one decoded video frame if the frame characteristic of said at least one video frame is the second characteristics, so as to change said only one decoded video frame for achieving the video effect.

27. The apparatus of claim 26, wherein the media encoder has a connectivity mechanism and the media editing device has a further connectivity mechanism for allowing the media editing device to communicate with the media encoder in order to receive therefore encoded media data in a wireless fashion.
28. The apparatus of claim 26, wherein the media decoder has a connectivity mechanism and the media editing device has a further connectivity mechanism for allowing the media editing device to provide the edited data to the media decoder in a wireless fashion.
29. The apparatus of claim 26, wherein the media encoder and the media editing device are integrated in an expanded encoding module.
30. The apparatus of claim 29, wherein the media decoder has a connectivity mechanism and the expanded encoding module has a further connectivity mechanism for allowing the expanded encoding module to provide the edited data to the media decoder in a wireless fashion.
31. The apparatus of claim 26, wherein the media decoder and the media editing device are integrated in an expanded decoding module.
32. The apparatus of claim 31, wherein the media encoder has a connectivity mechanism and the expanded decoding module has a further connectivity mechanism for allowing the media encoder to provide the edited data to the expanded decoding module in a wireless fashion.
33. The apparatus of claim 30, wherein each of the connectivity mechanism and the further connectivity mechanism comprises a bluetooth connectivity module.
34. The media coding system of claim 30, wherein each of the connectivity mechanism and the further connectivity mechanism comprises an infra-red connectivity module.

35. An apparatus configured for editing media files in a bitstream, the bitstream comprising a video bitstream and an audio bitstream, wherein the video bitstream comprises a plurality of input video frames having video frame data, comprising:

a video editing application module for specifying an editing effect on the input video frames, the input video frames comprising at least one video frame for video editing and a plurality of preceding video frames preceding said at least one video frame, wherein the input video frames comprise frame characteristics, the frame characteristics comprising a first characteristic and a second characteristic; and

a video editing device comprising:

an editor module adapted for identifying the frame characteristic of said at least one video frame; and

a compressed domain processing module, responsive to signals indicative of the frame characteristic of said at least one video frame, for modifying at least part of the video frame data based on frame and specified editing effects for providing modified video data if the frame characteristic is the first characteristic; and

a further module, adapted for decoding said at least one video frame for providing only one decoded video if the frame characteristic of said at least one video frame is the second characteristic, so as to change said only one decoded video frame for achieving the editing effect.

Claims 36 - 39. (canceled)

40. The apparatus of claim 35, further comprising:

a display screen for display video images based on modified video data.

41. The apparatus of claim 35, comprising a mobile terminal.

42. (canceled).

43. A computer readable storage medium embedded therein a software program, said software program comprising:

a code for determining, among a plurality of input video frames in a bitstream, at least one video frame for video editing to achieve a video effect, wherein the input video frames comprise frame characteristics, the frame characteristics comprising at least a first characteristic and a second characteristic, and wherein the input video frames comprise one or more preceding video frames preceding said at least one video frame;

a code for identifying the frame characteristic of said at least one input video frame;
and

a code for modifying the bitstream in the compressed domain based on specified editing parameters for providing a modified bitstream indicative of edited video frames if the frame characteristic of said at least one video frame is the first characteristic, and

a code for decoding said at least one video frame for providing only one decoded video frame, if the frame characteristic of said at least one video frame is the second characteristic, decoding said at least one video frame so as to change said only one decoded video frame for achieving the editing effect.

44. The computer readable storage medium of claim 43, wherein the software program further comprises

a code for modifying video data in one or more further input video frames in a further domain different from the compressed domain based on the frame characteristics of said further input video frame and the specified editing parameters so as to provide modified further video data.

Claims 45 - 48. (canceled)

49. An apparatus, comprising:

means for determining, among a plurality of input video frames in a bitstream, at least one video frame for video editing to achieve a video effect, wherein the input video frames comprises frame characteristics, the frame characteristics comprising at least a first characteristic and a second characteristic, and wherein the input frames comprise one or more preceding video frames preceding said at least one video frame;

means for identifying the frame characteristic of said at least one video frame in a bitstream, and

means for modifying at least part of the bitstream in the compressed domain based on and specified editing parameters for providing a modified bitstream indicative of edited video frames if the frame characteristic of said at least one video frame is the first characteristic, and

means for decoding said at least one video frame for providing only one decoded video frame if the frame characteristic of said at least one video frame is the second characteristic; and means for modifying said only one decoded video frame for achieving the video effect.

50. The apparatus of claim 49, further comprising:

means for converting the edited video frames into an edited media file.

Claims 51 - 52. (canceled)

53. The method of claim 3, wherein the video effect comprises a scene-transition effect, said method further comprising:

decoding at least one of said preceding video frames if the frame characteristic of said at least one video frame is the second characteristic, and
transforming the decoded video frame into an intra frame after said changing.

54. The method of claim 3, wherein the video effect comprises a color-change effect.

55. The apparatus of claim 17, wherein the spatial domain processing module comprises a special effect processor and a transition effect processor, and the video effect comprises a color-change effect and a scene-transition effect, wherein

if the video effect is a scene-transition effect, said transition effect processor is adapted for changing the decoded video frame and the decoding module is further adapted for decoding said at least one of said preceding video frames so as to transform the decoded

video frame into an intra frame after said changing for achieving the scene-transition effect;
and

if the video effect is a color-change effect, said special effect processor is adapted for changing the decoded video frame for achieving the color-change effect.

56. The apparatus of claim 26, wherein the media editing device further comprises a special effect processor and a transition effect processor, and the video effect comprises a color-change effect and a scene-transition effect, wherein

if the video effect is a scene-transition effect, said transition effect processor is adapted for changing the decoded video frame and the further module is further adapted for decoding said at least one of said preceding video frames so as to transform the decoded video frame into an intra frame after said changing for achieving the scene-transition effect;
and

if the video effect is a color-change effect, said special effect processor is adapted for changing the decoded video frame for achieving the color-change effect.

57. The apparatus of claim 35, wherein the video editing device further a special effect processor and a transition effect processor, and the editing effect comprises a color-change effect and a scene-transition effect, wherein

if the editing effect is a scene-transition effect, said transition effect processor is adapted for changing the decoded video frame and the further module is further adapted for decoding said at least one of said preceding video frames so as to transform the decoded video frame into an intra frame after said changing for achieving the scene-transition effect;
and

if the editing effect is a color-change effect, said special effect processor is adapted for changing the decoded video frame for achieving the color-change effect.

58. The computer readable storage medium of claim 43, wherein the video effect comprises a color-change effect and a scene-transition effect, said software program further comprising:

a code for changing the decoded video frame, decoding said at least one of said preceding video frame, transforming the decoding video frame into an intra frame after said changing for achieving the scene-transition effect, if the editing effect is the scene-transition effect, and

a coding for changing the decoded video frame for achieving the color-change effect if the editing effect is the color-change effect.

IX. EVIDENCE APPENDIX (37 CFR §41.37(c)(1)(ix))

There are no evidences submitted pursuant to 37 CFR §1.130, 1,131 or 1,132.

X. RELATED PROCEEDING APPENDIX (37 CFR §41.37(c)(1)(x))

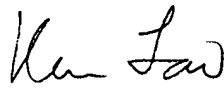
There are no prior decisions rendered by a court or the Board in any proceeding identified pursuant to 37 CFR §41.37(c)(1)(ii).

CONCLUSION

Claims 3-6, 10, 11, 15-17, 19-35, 40, 41, 43, 44, 49, 50 and 53-58 are rejected in error.
Appellant respectfully requests that the rejection of all pending claims be withdrawn.

Respectfully submitted,

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